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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,405

12/12/2005

Isabelle Chartier

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08/31/2009

Nixon Peabody LLP
200 Page Mill Road
Palo Alto, CA 94306

EXAMINER

GOFF II, JOHN L

ART UNIT

PAPER NUMBER

1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,405	Applicant(s) CHARTIER ET AL.	
	Examiner John L. Goff	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 5/7/09.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-11, 13, and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
4. Claim 1 as amended requires “a mask-less grid is placed above the substrate, this grid is coated with an array of glue droplets each having a dimension substantially equal to a width dimension of a smallest recess”. Claim 13 as amended requires “placing an array of glue droplets on a mask-less grid, wherein a dimension of each glue droplet is substantially equal a width dimension of the recess”. Applicants specification does not describe coating the grid with an array of glue droplets. The only description in the specification of coating the grid with glue is on page 9, lines 19-21 wherein a volume of glue (12) is placed on the grid.
5. Claim 1 as amended requires “a tool which presses on the grid and locally brings this grid into contact with the upper coplanar plane areas, so as to deposit the glue droplets as a film of glue on the upper coplanar plane area without said film entering into said recesses”. Claim 13 as

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amended requires “depositing the glue droplets on the upper coplanar plane area via the grid while in contact with the upper coplanar plane area, wherein the glue transfers from the grid to the upper coplanar plane area as a glue film”. Applicants specification does not describe depositing the glue droplets as a film on the upper coplanar plane areas. The description in the specification of depositing the glue on pages 9 and 10 describes depositing an array of glue micro-droplets from the volume of glue (12) placed on the grid using a doctor blade to screen print micro-droplets on the upper coplanar plane areas by forcing glue from the volume through the grid. There is no description of a glue film formed during the depositing step.

6. Claims 1-11, 13, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 as amended requires “a mask-less grid is placed above the substrate, this grid is coated with an array of glue droplets each having a dimension substantially equal to a width dimension of a smallest recess”. Claim 13 as amended requires “placing an array of glue droplets on a mask-less grid, wherein a dimension of each glue droplet is substantially equal a width dimension of the recess”. Applicants specification does not describe these limitations as noted above. Further, it is unclear what is required by a grid coated with an array of glue droplets each having a dimension substantially equal to a width dimension of the recess. It is noted both claims 1 and 13 require a step of coating the grid with the array of glue droplets and a step of pressing the grid such as with a tool to deposit the glue droplets such that using a doctor blade to press the volume of glue (12) through the grid cannot be considered to meet the claim limitations as pressing the volume of glue (12) through the grid may “coat” the grid with a glue

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droplet the size of the spacing the grid and then deposit the droplet. However, such an interpretation does not coat the grid with an array of glue droplets and then deposit those glue droplets. Because applicants only description of coating the grid is with a volume of glue (12) placed on the grid this is considered to meet the limitation.

Claim Rejections - 35 USC § 103

8. Claims 1-4, 10, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roitman et al. (U.S. Patent Application Publication 2003/0017305) in view of Khan et al. (US 2004/0020595), Chen et al. (U.S. Patent 6,251,219), or Watanabe et al. (JP 2000-71422 and see also the abstract).

Roitman teaches a process for assembling at least one micro-structured substrate (250) comprising upper coplanar plane areas and recesses (260) in between them the recesses having a width of 10 microns (Figure 7B; section [0075]- first sentence in section [0077]), by means of a glue (270) that can bond to these upper coplanar plane areas. Roitman appreciates that a variety of techniques can be used to deposit the glue on the upper coplanar plane areas, including screen printing (section [0080], section [0085]), and Roitman shows the adhesive when deposited does not enter the recesses (Figure 7B). It would have been obvious to one of ordinary skill in the art at the time the invention was made that screen printing as taught by Roitman is characterized by the use of a grid to deposit adhesive in select locations where the adhesive is coated on the grid in a volume subsequently forced through openings in the grid by a tool that presses on the grid so as to deposit a film on the select locations following which the grid is removed as evidenced by Khan (Figure 5; section [0020] and [0021]), Chen (Column 1, lines 26-37), or Watanabe (Figure

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1 and the abstract), it being noted the grids taught by Khan, Chen, or Watanabe do not include any additional components such as a mask such that they are considered mask-less grids.

Before depositing the adhesive, Roitman modifies the surface of the upper coplanar plane areas using plasma adhesion enhancement treatment (section [0084]). And, one having ordinary skill in the art would readily appreciate that the plasma treatment adapts the wettability of the surface to a material being applied thereto (it being noted that plasma treatment is also the present invention's treatment of choice – p. 13, lines 1-7).

However, it is unclear as to whether the grid necessarily contacts the upper coplanar plane areas of Roitman. The teachings of Khan, Chen, and Watanabe provide evidence that it is known in the art of screen-printing to contact the surface of a substrate, be it flat or micro-structured, with the grid when using a screen printing technique to deposit adhesive in select locations on the surface of the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to contact the upper coplanar plane areas of Roitman with the grid when depositing the glue because such is known in the art of screen printing, as shown by Khan, Chen, or Watanabe to accurately deposit the glue.

As to the limitation in claim 1 of “a mask-less grid is placed above the substrate, this grid is coated with an array of glue droplets each having a dimension substantially equal to a width dimension of a smallest recess” and claim 13 of “placing an array of glue droplets on a mask-less grid, wherein a dimension of each glue droplet is substantially equal a width dimension of the recess”, Roitman as modified by Khan, Chen, or Watanabe coats the grid with a volume of glue prior to depositing the glue as a glue “droplet” such that the limitation is considered met (See the more thorough discussion under 35 USC 112 above). In the event it is shown that coating the

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grid with a volume of glue followed by using a doctor blade to force the glue through the openings in the grid meets the limitation when the openings have a dimension substantially equal to a width dimension of a smallest recess the following rejection would apply, it being noted this interpretation is not considered to meet the limitation as set forth in the 35 USC 112 rejection above. Khan, Chen, and Watanabe suggest the opening in the grid is equal to the size of the glue droplet/film deposited without requiring any particular size. Roitman is not limited to any particular width for the upper coplanar plane and areas and appears to depict these areas as having substantially the same width as the recesses (Figures 6A and 6B). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the upper coplanar plane areas in Roitman as modified by Khan, Chen, or Watanabe have any dimension desired including substantially the same as the width of the recesses as such is depicted in Roitman, Roitman as modified does not require any particular recess or teach away from any particular recess, and applicants have not shown any unexpected result for a width substantially the same as the recesses.

As to the limitation in claim 1 of “a tool which presses on the grid and locally brings this grid into contact with the upper coplanar plane areas, so as to deposit the glue droplets as a film of glue on the upper coplanar plane area without said film entering into said recesses” and in claim 13 of “depositing the glue droplets on the upper coplanar plane area via the grid while in contact with the upper coplanar plane area, wherein the glue transfers from the grid to the upper coplanar plane area as a glue film”, Roitman as modified by Khan, Chen, or Watanabe using a tool to press the glue through the grid which glue is a droplet forming a film such that the limitation is met.

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As to claim 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the screen printing tool in Roitman a doctor blade to press on the grid as was well known and suitable in the screen printing art as evidenced by Khan, Chen, or Watanabe.

As to claim 3, the plasma treatment taught by Roitman is considered, like that of the present invention, to control spreading of the glue.

As to claim 4, Roitman teaches closing the micro-structured substrate (250) with a closing substrate (255) that is fixed to the upper coplanar plane areas by the glue (Figure 7B; sections 0075-0076]).

As to claim 10, Roitman teaches such (sections [0075-0076]).

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roitman and Khan, Chen, or Watanabe as applied to claims 1-4, 10, 11, 13, and 14 above, and further in view of Eisenbeiss et al. (U.S. Patent Application Publication 2005/0077175).

Roitman and Khan, Chen, or Watanabe as applied above teach all of the limitations in claims 5 and 6 except for a specific teaching of providing biological probes in recesses of the micro-structured substrate or on the closing substrate. However, placement of devices (i.e. probes) within the recesses between a micro-structured substrate and a closing substrate is well known and conventional in the art, as evidenced by Eisenbeiss (section [0032]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include with the recesses or on the closing substrate taught by Roitman as modified by Khan, Chen, or Watanabe well known devices such as probes as evidenced by Eisenbeiss depending on the intended use of the finished product.

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10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roitman and Khan, Chen, or Watanabe as applied to claims 1-4, 10, 11, 13, and 14 above, and further in view of Soane et al. (U.S. Patent 6,176,962).

As to claim 7, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the closing substrate taught by Roitman as modified by Khan, Chen, or Watanabe with drillings through which fluid will be added into the recesses in the micro-structured substrate of Roitman because such is known in the art, as taught by Soane (Figures 5-6; column 5, lines 46-50).

11. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roitman and Khan, Chen, or Watanabe as applied to claims 1-4, 10, 11, 13, and 14 above, and further in view of Lum et al. (U.S. Patent 5,932,315).

As to claims 8 and 9, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a plurality of bonded micro-structured and closing substrates as taught by Roitman as modified by Khan, Chen, or Watanabe by bonding one, large micro-structured substrate to one, large closing substrate and then separating the large, bonded substrates into a plurality of smaller, bonded substrates because such is known in the art, as taught by Lum (column 7, lines 36-41), where this allows for mass production of the bonded substrates and hence decreased production time.

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Response to Arguments

12. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

The new limitations are fully addressed above.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571)272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/
Primary Examiner, Art Unit 1791

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